ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Tetra Tech, Inc.
240 Continental Drive
Suite 200
Newark DE 19713

February 09, 2012

Project: Riverside Ave, NJ

Submittal Date: 01/28/2012
Group Number: 1287064
SDG: RVA01
PO Number: 1081040
State of Sample Origin: NJ

| Client Sample Description | Lancaster Labs # | Collected |
|---|---|---|
| TP2-2 Grab Soil Sample Riverside Avenue | 6534429 | 01/25/2012 12:45 |
| TP3-2 Grab Soil Sample Riverside Avenue | 6534430 | 01/25/2012 15:15 |
| TP5-2 Grab Soil Sample Riverside Avenue | 6534431 | 01/26/2012 10:30 |
| TP6-2 Grab Soil Sample Riverside Avenue | 6534432 | 01/27/2012 11:45 |
| TP7-2 Unspiked Grab Soil Sample Riverside Avenue | 6534433 | 01/27/2012 13:00 |
| TP7-2 Matrix Spike Grab Soil Sample Riverside Avenue | 6534434 | 01/27/2012 13:00 |
| TP7-2 Matrix Spike Dup Grab Soil Sample Riverside Avenue | 6534435 | 01/27/2012 13:00 |

**METHODOLOGY**

The specified methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Tetra Tech, Inc. Attn: Kevin Scott
ELECTRONIC COPY TO Data Package Group

Questions? Contact your Client Services Representative
Megan A Moeller at (717) 656-2300 Ext. 1246

Respectfully Submitted,

ANALYTICAL RESULTS

Prepared by:

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2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Tetra Tech, Inc.
240 Continental Drive
Suite 200
Newark DE 19713

February 09, 2012

Michele J. Smith
Senior Specialist

Tetra Tech, Inc.
Project: Riverside Ave, NJ
SDG: RVA01

Report Date: 2/9/2012 21:10
Submit Date: 1/28/2012 10:00

| Analysis Name | Units | 6534429 TP2-2 | | | 6534430 TP3-2 | | |
|---|---|---|---|---|---|---|---|
| | | Dry Result | Dry LOQ** | Dry MDL | Dry Result | Dry LOQ** | Dry MDL |
| Moisture | % | 17.9 | 0.50 | 0.50 | 15.6 | 0.50 | 0.50 |
| Moisture | % | | n.a. | n.a. | | n.a. | n.a. |
| Moisture Duplicate | % | | n.a. | n.a. | | n.a. | n.a. |

| Analysis Name | Units | 6534431 TP5-2 | | | 6534432 TP6-2 | | |
|---|---|---|---|---|---|---|---|
| | | Dry Result | Dry LOQ** | Dry MDL | Dry Result | Dry LOQ** | Dry MDL |
| Moisture | % | 18.5 | 0.50 | 0.50 | 15.2 | 0.50 | 0.50 |
| Moisture | % | | n.a. | n.a. | | n.a. | n.a. |
| Moisture Duplicate | % | | n.a. | n.a. | | n.a. | n.a. |

| Analysis Name | Units | 6534433 TP7-2 | | | 6534434 TP7-2 | | |
|---|---|---|---|---|---|---|---|
| | | Dry Result | Dry LOQ** | Dry MDL | Dry Result | Dry LOQ** | Dry MDL |
| Moisture | % | 19.7 | 0.50 | 0.50 | | n.a. | n.a. |
| Moisture | % | | n.a. | n.a. | 19.7 | 0.50 | 0.50 |
| Moisture Duplicate | % | | n.a. | n.a. | | n.a. | n.a. |

| Analysis Name | Units | 6534435 TP7-2 | | |
|---|---|---|---|---|
| | | Dry Result | Dry LOQ** | Dry MDL |
| Moisture | % | | n.a. | n.a. |
| Moisture | % | 19.7 | 0.50 | 0.50 |
| Moisture Duplicate | % | 20.0 | 0.50 | 0.50 |

| Analysis Name | Units | 6534429 TP2-2 | | | 6534430 TP3-2 | | |
|---|---|---|---|---|---|---|---|
| | | Dry Result | Dry MRL** | Dry EDL | Dry Result | Dry MRL** | Dry EDL |
| 2378-TCDD | ng/kg | < 1.20 | 1.20 | 0.0409 | < 1.17 | 1.17 | 0.0451 |
| 12378-PeCDD | ng/kg | < 6.00 | 6.00 | 0.0555 | < 5.83 | 5.83 | 0.0517 |
| 123478-HxCDD | ng/kg | < 6.00 | 6.00 | 0.0351 | < 5.83 | 5.83 | 0.0449 |
| 123678-HxCDD | ng/kg | < 6.00 | 6.00 | 0.0362 | < 5.83 | 5.83 | 0.0487 |
| 123789-HxCDD | ng/kg | < 6.00 | 6.00 | 0.0346 | < 5.83 | 5.83 | 0.0411 |
| 1234678-HpCDD | ng/kg | 21.6 B | 6.00 | 0.0739 | 26.5 B | 5.83 | 0.0845 |
| OCDD | ng/kg | 1,450 B | 12.0 | 0.0442 | 2,760 B | 11.7 | 0.0563 |
| 2378-TCDF | ng/kg | < 1.20 | 1.20 | 0.0639 | < 1.17 | 1.17 | 0.0553 |
| 2378-TCDF-Conf | ng/kg | | n.a. | n.a. | | n.a. | n.a. |
| 12378-PeCDF | ng/kg | < 6.00 | 6.00 | 0.0320 | < 5.83 | 5.83 | 0.0308 |
| 23478-PeCDF | ng/kg | < 6.00 | 6.00 | 0.0308 | < 5.83 | 5.83 | 0.0287 |
| 123478-HxCDF | ng/kg | < 6.00 | 6.00 | 0.0283 | < 5.83 | 5.83 | 0.0319 |
| 123678-HxCDF | ng/kg | < 6.00 | 6.00 | 0.0266 | < 5.83 | 5.83 | 0.0290 |
| 123789-HxCDF | ng/kg | < 6.00 | 6.00 | 0.0289 | < 5.83 | 5.83 | 0.0321 |

** = This limit was used in the evaluation of the final result

Tetra Tech, Inc.
Project: Riverside Ave, NJ
SDG: RVA01

Report Date: 2/9/2012 21:10
Submit Date: 1/28/2012 10:00

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 234678-HxCDF | ng/kg | < 6.00 | 6.00 | 0.0275 | < 5.83 | 5.83 | 0.0284 |
| 1234678-HpCDF | ng/kg | 9.17 B | 6.00 | 0.0178 | 10.0 B | 5.83 | 0.0219 |
| 1234789-HpCDF | ng/kg | < 6.00 | 6.00 | 0.0244 | < 5.83 | 5.83 | 0.0316 |
| OCDF | ng/kg | 22.6 B | 12.0 | 0.0303 | 28.5 B | 11.7 | 0.0307 |
| Total TCDD | ng/kg | 2.66 QB | 1.20 | 0.0409 | 3.15 QB | 1.17 | 0.0451 |
| Total PeCDD | ng/kg | < 6.00 | 6.00 | 0.0555 | < 5.83 | 5.83 | 0.0517 |
| Total HxCDD | ng/kg | 11.2 QB | 6.00 | 0.0352 | 8.68 QB | 5.83 | 0.0447 |
| Total HpCDD | ng/kg | 50.7 B | 6.00 | 0.0739 | 56.9 QB | 5.83 | 0.0845 |
| Total TCDF | ng/kg | 11.7 QB | 1.20 | 0.0639 | 8.73 QB | 1.17 | 0.0553 |
| Total PeCDF | ng/kg | 9.83 QB | 6.00 | 0.0314 | 7.54 QB | 5.83 | 0.0296 |
| Total HxCDF | ng/kg | 14.2 QB | 6.00 | 0.0278 | 12.1 QB | 5.83 | 0.0302 |
| Total HpCDF | ng/kg | 24.6 QB | 6.00 | 0.0207 | 29.6 QB | 5.83 | 0.0261 |

| | | 6534431 | | | 6534432 | | |
|---|---|---|---|---|---|---|---|
| Analysis Name | Units | TP5-2 | | | TP6-2 | | |
| | | Dry Result | Dry MRL** | Dry EDL | Dry Result | Dry MRL** | Dry EDL |
| 2378-TCDD | ng/kg | < 1.23 | 1.23 | 0.0540 | 1.65 B | 1.18 | 0.0779 |
| 12378-PeCDD | ng/kg | < 6.13 | 6.13 | 0.0555 | < 5.88 | 5.88 | 0.0643 |
| 123478-HxCDD | ng/kg | < 6.13 | 6.13 | 0.0537 | < 5.88 | 5.88 | 0.0480 |
| 123678-HxCDD | ng/kg | < 6.13 | 6.13 | 0.0574 | 5.91 B | 5.88 | 0.0495 |
| 123789-HxCDD | ng/kg | < 6.13 | 6.13 | 0.0537 | < 5.88 | 5.88 | 0.0531 |
| 1234678-HpCDD | ng/kg | 49.8 B | 6.13 | 0.0829 | 59.9 B | 5.88 | 0.0894 |
| OCDD | ng/kg | 1,870 B | 12.3 | 0.0823 | 1,710 B | 11.8 | 0.0960 |
| 2378-TCDF | ng/kg | < 1.23 | 1.23 | 0.0445 | < 1.18 | 1.18 | 0.0629 |
| 2378-TCDF-Conf | ng/kg | | n.a. | n.a. | | n.a. | n.a. |
| 12378-PeCDF | ng/kg | < 6.13 | 6.13 | 0.0372 | < 5.88 | 5.88 | 0.0304 |
| 23478-PeCDF | ng/kg | < 6.13 | 6.13 | 0.0292 | < 5.88 | 5.88 | 0.0294 |
| 123478-HxCDF | ng/kg | < 6.13 | 6.13 | 0.0444 | < 5.88 | 5.88 | 0.0346 |
| 123678-HxCDF | ng/kg | < 6.13 | 6.13 | 0.0454 | < 5.88 | 5.88 | 0.0351 |
| 123789-HxCDF | ng/kg | < 6.13 | 6.13 | 0.0491 | < 5.88 | 5.88 | 0.0389 |
| 234678-HxCDF | ng/kg | < 6.13 | 6.13 | 0.0415 | < 5.88 | 5.88 | 0.0347 |
| 1234678-HpCDF | ng/kg | 22.9 B | 6.13 | 0.0425 | 26.3 B | 5.88 | 0.0366 |
| 1234789-HpCDF | ng/kg | < 6.13 | 6.13 | 0.0558 | < 5.88 | 5.88 | 0.0483 |
| OCDF | ng/kg | 110 B | 12.3 | 0.0757 | 57.4 B | 11.8 | 0.0601 |
| Total TCDD | ng/kg | 2.32 QB | 1.23 | 0.0540 | 13.1 QB | 1.18 | 0.0779 |
| Total PeCDD | ng/kg | < 6.13 | 6.13 | 0.0555 | 25.7 QB | 5.88 | 0.0643 |
| Total HxCDD | ng/kg | 10.1 QB | 6.13 | 0.0550 | 56.4 QB | 5.88 | 0.0501 |
| Total HpCDD | ng/kg | 90.6 B | 6.13 | 0.0829 | 117 QB | 5.88 | 0.0894 |
| Total TCDF | ng/kg | 4.00 QB | 1.23 | 0.0445 | 16.0 QB | 1.18 | 0.0629 |
| Total PeCDF | ng/kg | < 6.13 | 6.13 | 0.0326 | 16.6 QB | 5.88 | 0.0300 |
| Total HxCDF | ng/kg | 19.9 QB | 6.13 | 0.0449 | 29.7 QB | 5.88 | 0.0357 |
| Total HpCDF | ng/kg | 94.6 QB | 6.13 | 0.0483 | 65.4 QB | 5.88 | 0.0417 |

| | | 6534433 | | | 6534434 | | |
|---|---|---|---|---|---|---|---|
| Analysis Name | Units | TP7-2 | | | TP7-2 | | |
| | | Dry Result | Dry MRL** | Dry EDL | Dry Result | Dry MRL** | Dry EDL |

** = This limit was used in the evaluation of the final result

Tetra Tech, Inc.
Project: Riverside Ave, NJ
SDG: RVA01

Report Date: 2/9/2012 21:10
Submit Date: 1/28/2012 10:00

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2378-TCDD | ng/kg | < 1.23 | | 1.23 | 0.0643 | 27.1 | B | 1.23 | 0.0605 |
| 12378-PeCDD | ng/kg | < 6.15 | | 6.15 | 0.0991 | 131 | B | 6.17 | 0.0924 |
| 123478-HxCDD | ng/kg | < 6.15 | | 6.15 | 0.0699 | 128 | B | 6.17 | 0.0687 |
| 123678-HxCDD | ng/kg | < 6.15 | | 6.15 | 0.0705 | 132 | B | 6.17 | 0.0737 |
| 123789-HxCDD | ng/kg | < 6.15 | | 6.15 | 0.0852 | 148 | B | 6.17 | 0.0756 |
| 1234678-HpCDD | ng/kg | 50.2 | B | 6.15 | 0.126 | 181 | B | 6.17 | 0.131 |
| OCDD | ng/kg | 2,390 | B | 12.3 | 0.118 | 2,900 | B | 12.3 | 0.123 |
| 2378-TCDF | ng/kg | | | n.a. | n.a. | 26.7 | B | 1.23 | 0.0801 |
| 2378-TCDF-Conf | ng/kg | < 1.23 | | 1.23 | 0.0903 | | | n.a. | n.a. |
| 12378-PeCDF | ng/kg | < 6.15 | | 6.15 | 0.0405 | 139 | B | 6.17 | 0.0463 |
| 23478-PeCDF | ng/kg | < 6.15 | | 6.15 | 0.0387 | 124 | B | 6.17 | 0.0399 |
| 123478-HxCDF | ng/kg | < 6.15 | | 6.15 | 0.0493 | 134 | B | 6.17 | 0.0712 |
| 123678-HxCDF | ng/kg | < 6.15 | | 6.15 | 0.0489 | 136 | B | 6.17 | 0.0706 |
| 123789-HxCDF | ng/kg | < 6.15 | | 6.15 | 0.0580 | 133 | B | 6.17 | 0.0768 |
| 234678-HxCDF | ng/kg | < 6.15 | | 6.15 | 0.0472 | 129 | B | 6.17 | 0.0666 |
| 1234678-HpCDF | ng/kg | 26.7 | B | 6.15 | 0.0430 | 150 | B | 6.17 | 0.0621 |
| 1234789-HpCDF | ng/kg | < 6.15 | | 6.15 | 0.0655 | 128 | B | 6.17 | 0.0797 |
| OCDF | ng/kg | 56.5 | B | 12.3 | 0.102 | 319 | B | 12.3 | 0.100 |
| Total TCDD | ng/kg | 5.52 | QB | 1.23 | 0.0643 | | | n.a. | n.a. |
| Total PeCDD | ng/kg | 8.80 | QB | 6.15 | 0.0991 | | | n.a. | n.a. |
| Total HxCDD | ng/kg | 26.3 | QB | 6.15 | 0.0745 | | | n.a. | n.a. |
| Total HpCDD | ng/kg | 98.7 | B | 6.15 | 0.126 | | | n.a. | n.a. |
| Total TCDF | ng/kg | 18.1 | QB | 1.23 | 0.0874 | | | n.a. | n.a. |
| Total PeCDF | ng/kg | 17.8 | QB | 6.15 | 0.0396 | | | n.a. | n.a. |
| Total HxCDF | ng/kg | 31.1 | QB | 6.15 | 0.0506 | | | n.a. | n.a. |
| Total HpCDF | ng/kg | 67.9 | QB | 6.15 | 0.0524 | | | n.a. | n.a. |

| Analysis Name | Units | 6534435 TP7-2 Dry Result | | Dry MRL** | Dry EDL |
|---|---|---|---|---|---|
| 2378-TCDD | ng/kg | 27.5 | B | 1.24 | 0.0573 |
| 12378-PeCDD | ng/kg | 134 | B | 6.21 | 0.0811 |
| 123478-HxCDD | ng/kg | 123 | B | 6.21 | 0.0560 |
| 123678-HxCDD | ng/kg | 127 | B | 6.21 | 0.0618 |
| 123789-HxCDD | ng/kg | 148 | B | 6.21 | 0.0620 |
| 1234678-HpCDD | ng/kg | 186 | B | 6.21 | 0.164 |
| OCDD | ng/kg | 2,740 | B | 12.4 | 0.146 |
| 2378-TCDF | ng/kg | 26.1 | B | 1.24 | 0.0741 |
| 2378-TCDF-Conf | ng/kg | | | n.a. | n.a. |
| 12378-PeCDF | ng/kg | 135 | B | 6.21 | 0.0399 |
| 23478-PeCDF | ng/kg | 124 | B | 6.21 | 0.0364 |
| 123478-HxCDF | ng/kg | 134 | B | 6.21 | 0.0593 |
| 123678-HxCDF | ng/kg | 134 | B | 6.21 | 0.0579 |
| 123789-HxCDF | ng/kg | 131 | B | 6.21 | 0.0676 |
| 234678-HxCDF | ng/kg | 129 | B | 6.21 | 0.0560 |
| 1234678-HpCDF | ng/kg | 149 | B | 6.21 | 0.0533 |

** = This limit was used in the evaluation of the final result

Tetra Tech, Inc.
Project: Riverside Ave, NJ
SDG: RVA01

Report Date: 2/9/2012 21:10
Submit Date: 1/28/2012 10:00

| | | | | | |
|---|---|---|---|---|---|
| 1234789-HpCDF | ng/kg | 131 | B | 6.21 | 0.0821 |
| OCDF | ng/kg | 312 | B | 12.4 | 0.135 |
| Total TCDD | ng/kg | | | n.a. | n.a. |
| Total PeCDD | ng/kg | | | n.a. | n.a. |
| Total HxCDD | ng/kg | | | n.a. | n.a. |
| Total HpCDD | ng/kg | | | n.a. | n.a. |
| Total TCDF | ng/kg | | | n.a. | n.a. |
| Total PeCDF | ng/kg | | | n.a. | n.a. |
| Total HxCDF | ng/kg | | | n.a. | n.a. |
| Total HpCDF | ng/kg | | | n.a. | n.a. |

** = This limit was used in the evaluation of the final result

| CAT No. | Analysis Name | Method | Trial ID | Batch | Analysis Date/Time | Analyst | Dilution |
|---|---|---|---|---|---|---|---|
| **6534429** | **TP2-2 Grab Soil Sample** | | | | | | |
| 11031 | Dioxins/Furans in Solids- | SW-846 8290A | 1 | 12030001 | 2/2/12 0515 | Nelson H Risser | 1 |
| 11030 | Dioxins/Furans in Solids - Sox | SW-846 8290A | 1 | 12030001 | 1/30/12 1200 | Ginelle L Haines | 1 |
| 00111 | Moisture | SM20 2540 G | 1 | 12032820004B | 2/1/12 1903 | Scott W Freisher | 1 |
| **6534430** | **TP3-2 Grab Soil Sample** | | | | | | |
| 11031 | Dioxins/Furans in Solids- | SW-846 8290A | 1 | 12030001 | 2/2/12 0611 | Nelson H Risser | 1 |
| 11030 | Dioxins/Furans in Solids - Sox | SW-846 8290A | 1 | 12030001 | 1/30/12 1200 | Ginelle L Haines | 1 |
| 00111 | Moisture | SM20 2540 G | 1 | 12032820004B | 2/1/12 1903 | Scott W Freisher | 1 |
| **6534431** | **TP5-2 Grab Soil Sample** | | | | | | |
| 11031 | Dioxins/Furans in Solids- | SW-846 8290A | 1 | 12030001 | 2/2/12 0708 | Nelson H Risser | 1 |
| 11030 | Dioxins/Furans in Solids - Sox | SW-846 8290A | 1 | 12030001 | 1/30/12 1200 | Ginelle L Haines | 1 |
| 00111 | Moisture | SM20 2540 G | 1 | 12032820004B | 2/1/12 1903 | Scott W Freisher | 1 |
| **6534432** | **TP6-2 Grab Soil Sample** | | | | | | |
| 11031 | Dioxins/Furans in Solids- | SW-846 8290A | 1 | 12030001 | 2/2/12 0805 | Nelson H Risser | 1 |
| 11030 | Dioxins/Furans in Solids - Sox | SW-846 8290A | 1 | 12030001 | 1/30/12 1200 | Ginelle L Haines | 1 |
| 00111 | Moisture | SM20 2540 G | 1 | 12032820004B | 2/1/12 1903 | Scott W Freisher | 1 |
| **6534433** | **TP7-2 Unspiked Grab Soil Sample** | | | | | | |
| 11650 | Dioxins/Furans in Solids-Conf | SW-846 8290A | 1 | 12030001 | 2/7/12 1755 | Nelson H Risser | 1 |
| 11031 | Dioxins/Furans in Solids- | SW-846 8290A | 1 | 12030001 | 2/2/12 0901 | Nelson H Risser | 1 |
| 11030 | Dioxins/Furans in Solids - Sox | SW-846 8290A | 1 | 12030001 | 1/30/12 1200 | Ginelle L Haines | 1 |
| 00111 | Moisture | SM20 2540 G | 1 | 12032820004B | 2/1/12 1903 | Scott W Freisher | 1 |
| **6534434** | **TP7-2 Matrix Spike Grab Soil Sample** | | | | | | |
| 11031 | Dioxins/Furans in Solids- | SW-846 8290A | 1 | 12030001 | 2/2/12 0958 | Nelson H Risser | 1 |
| 11030 | Dioxins/Furans in Solids - Sox | SW-846 8290A | 1 | 12030001 | 1/30/12 1200 | Ginelle L Haines | 1 |
| 00118 | Moisture | SM20 2540 G | 1 | 12032820004B | 2/1/12 1903 | Scott W Freisher | 1 |
| **6534435** | **TP7-2 Matrix Spike Dup Grab Soil Sample** | | | | | | |
| 11031 | Dioxins/Furans in Solids- | SW-846 8290A | 1 | 12030001 | 2/2/12 1055 | Nelson H Risser | 1 |
| 11030 | Dioxins/Furans in Solids - Sox | SW-846 8290A | 1 | 12030001 | 1/30/12 1200 | Ginelle L Haines | 1 |
| 00118 | Moisture | SM20 2540 G | 1 | 12032820004B | 2/1/12 1903 | Scott W Freisher | 1 |
| 00121 | Moisture Duplicate | SM20 2540 G | 1 | 12032820004B | 2/1/12 1903 | Scott W Freisher | 1 |

Client Name: Tetra Tech, Inc. Group Number: 1287064

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank LOQ** | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | Max RPD |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: 12032820004B | Sample number(s): 6534429-6534435 | | | | | | | | |
| Moisture | | | | | 100 | | 99-101 | | |
| Moisture | | | | | 100 | | 99-101 | | |
| Moisture Duplicate | | | | | 100 | | 99-101 | | |

| Analysis Name | Blank Result | Blank MRL** | Blank EDL | Report Units | OPR %REC | OPRD %REC | OPR/OPRD Limits | RPD | Max RPD |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: 12030001 | Sample number(s): 6534429-6534435 | | | | | | | | |
| 2378-TCDD | < 1.00 | 1.00 | 0.0402 | ng/kg | 104 | | 67-158 | | |
| 12378-PeCDD | < 5.00 | 5.00 | 0.0298 | ng/kg | 109 | | 70-142 | | |
| 123478-HxCDD | < 5.00 | 5.00 | 0.0254 | ng/kg | 104 | | 70-164 | | |
| 123678-HxCDD | < 5.00 | 5.00 | 0.0263 | ng/kg | 104 | | 76-134 | | |
| 123789-HxCDD | < 5.00 | 5.00 | 0.0250 | ng/kg | 106 | | 64-162 | | |
| 1234678-HpCDD | < 5.00 | 5.00 | 0.0235 | ng/kg | 103 | | 70-140 | | |
| OCDD | < 10.0 | 10.0 | 0.0239 | ng/kg | 103 | | 78-144 | | |
| 2378-TCDF | < 1.00 | 1.00 | 0.0321 | ng/kg | 106 | | 75-158 | | |
| 2378-TCDF-Conf | < 1.00 | 1.00 | 0.0275 | ng/kg | 106 | | 75-158 | | |
| 12378-PeCDF | < 5.00 | 5.00 | 0.0196 | ng/kg | 105 | | 80-134 | | |
| 23478-PeCDF | < 5.00 | 5.00 | 0.0208 | ng/kg | 100 | | 68-160 | | |
| 123478-HxCDF | < 5.00 | 5.00 | 0.0227 | ng/kg | 108 | | 72-134 | | |
| 123678-HxCDF | < 5.00 | 5.00 | 0.0194 | ng/kg | 102 | | 84-130 | | |
| 123789-HxCDF | < 5.00 | 5.00 | 0.0255 | ng/kg | 106 | | 78-130 | | |
| 234678-HxCDF | < 5.00 | 5.00 | 0.0211 | ng/kg | 103 | | 70-156 | | |
| 1234678-HpCDF | < 5.00 | 5.00 | 0.0110 | ng/kg | 99 | | 82-122 | | |
| 1234789-HpCDF | < 5.00 | 5.00 | 0.0243 | ng/kg | 102 | | 78-138 | | |
| OCDF | < 10.0 | 10.0 | 0.0289 | ng/kg | 103 | | 63-170 | | |
| Total TCDD | 1.25 | 1.00 | 0.0402 | ng/kg | | | | | |
| Total PeCDD | < 5.00 | 5.00 | 0.0298 | ng/kg | | | | | |
| Total HxCDD | < 5.00 | 5.00 | 0.0255 | ng/kg | | | | | |
| Total HpCDD | < 5.00 | 5.00 | 0.0235 | ng/kg | | | | | |
| Total TCDF | 1.34 | 1.00 | 0.0321 | ng/kg | | | | | |
| Total PeCDF | < 5.00 | 5.00 | 0.0202 | ng/kg | | | | | |
| Total HxCDF | < 5.00 | 5.00 | 0.0220 | ng/kg | | | | | |
| Total HpCDF | < 5.00 | 5.00 | 0.0229 | ng/kg | | | | | |

* - Outside of specification
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.
** = This limit was used in the evaluation of the final result

## Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | DUP RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: 12032820004B | Sample number(s): 6534429-6534435 BKG: 6534433 | | | | | | | | |
| Moisture | | | | | | 19.7 | 20.0 | 1 | 15 |
| Moisture | | | | | | 19.7 | 20.0 | 1 | 15 |
| Moisture Duplicate | | | | | | 19.7 | 20.0 | 1 | 15 |
| Batch number: 12030001 | Sample number(s): 6534429-6534435 UNSPK: 6534433 | | | | | | | | |
| 2378-TCDD | 108 | 109 | 67-158 | 1 | 25 | | | | |
| 12378-PeCDD | 105 | 107 | 70-142 | 2 | 25 | | | | |
| 123478-HxCDD | 103 | 99 | 70-164 | 4 | 25 | | | | |
| 123678-HxCDD | 105 | 100 | 76-134 | 4 | 25 | | | | |
| 123789-HxCDD | 119 | 117 | 64-162 | 0 | 25 | | | | |
| 1234678-HpCDD | 106 | 109 | 70-140 | 3 | 25 | | | | |
| OCDD | 208 (2) | 139 (2) | 78-144 | 6 | 25 | | | | |
| 2378-TCDF | 103 | 99 | 75-158 | 2 | 25 | | | | |
| 2378-TCDF-Conf | 103 | 99 | 75-158 | 2 | 25 | | | | |
| 12378-PeCDF | 112 | 108 | 80-134 | 3 | 25 | | | | |
| 23478-PeCDF | 99 | 98 | 68-160 | 0 | 25 | | | | |
| 123478-HxCDF | 106 | 106 | 72-134 | 1 | 25 | | | | |
| 123678-HxCDF | 108 | 106 | 84-130 | 1 | 25 | | | | |
| 123789-HxCDF | 107 | 105 | 78-130 | 1 | 25 | | | | |
| 234678-HxCDF | 103 | 103 | 70-156 | 0 | 25 | | | | |
| 1234678-HpCDF | 100 | 98 | 82-122 | 1 | 25 | | | | |
| 1234789-HpCDF | 103 | 104 | 78-138 | 2 | 25 | | | | |
| OCDF | 106 | 103 | 63-170 | 2 | 25 | | | | |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Dioxins/Furans in Solids-HRMS
Batch number: 12030001

| | 13C12-2378-TCDD | 13C12-23478-PeCDF | 13C12-123478-HxCDF | 13C12-123678-HxCDF |
|---|---|---|---|---|
| 6534429 | 79 | 82 | 80 | 83 |
| 6534430 | 76 | 79 | 72 | 76 |

* - Outside of specification
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.
** = This limit was used in the evaluation of the final result

| | | | | |
|---|---|---|---|---|
| 6534431 | 75 | 77 | 80 | 76 |
| 6534432 | 64 | 76 | 78 | 76 |
| 6534433 | 80 | 88 | 77 | 76 |
| 6534434 | 75 | 74 | 78 | 76 |
| 6534435 | 74 | 72 | 73 | 72 |
| Blank | 86 | 88 | 83 | 96 |
| MS | 75 | 74 | 78 | 76 |
| MSD | 74 | 72 | 73 | 72 |
| OPR | 70 | 72 | 67 | 87 |
| Limits: | 25-164 | 21-178 | 26-152 | 26-123 |

| | 13C12-234678-HxCDF | 13C12-123789-HxCDF | 13C12-1234678-HpCDF | 13C12-1234789-HpCDF |
|---|---|---|---|---|
| 6534429 | 81 | 83 | 89 | 74 |
| 6534430 | 74 | 73 | 81 | 65 |
| 6534431 | 80 | 74 | 74 | 61 |
| 6534432 | 76 | 73 | 68 | 56 |
| 6534433 | 77 | 67 | 66 | 48 |
| 6534434 | 78 | 74 | 66 | 57 |
| 6534435 | 73 | 64 | 62 | 43 |
| Blank | 87 | 77 | 139 | 67 |
| MS | 78 | 74 | 66 | 57 |
| MSD | 73 | 64 | 62 | 43 |
| OPR | 72 | 59 | 121 | 50 |
| Limits: | 28-136 | 29-147 | 28-143 | 26-138 |

| | 13C12-OCDF | 13C12-12378-PeCDD | 13C12-123478-HxCDD | 13C12-123678-HxCDD |
|---|---|---|---|---|
| 6534429 | 68 | 83 | 82 | 82 |
| 6534430 | 60 | 80 | 74 | 76 |
| 6534431 | 46 | 73 | 79 | 77 |
| 6534432 | 40 | 75 | 77 | 77 |
| 6534433 | 29 | 84 | 70 | 71 |
| 6534434 | 40 | 76 | 77 | 74 |
| 6534435 | 26 | 73 | 76 | 74 |
| Blank | 56 | 93 | 89 | 91 |
| MS | 40 | 76 | 77 | 74 |
| MSD | 26* | 73 | 76 | 74 |
| OPR | 39* | 76 | 78 | 77 |
| Limits: | 17-157 | 25-181 | 32-141 | 28-130 |

| | 13C12-123789-HxCDD | 13C12-1234678-HpCDD | 13C12-OCDD | 13C12-2378-TCDF |
|---|---|---|---|---|
| 6534429 | 83 | 81 | 76 | 78 |
| 6534430 | 80 | 74 | 71 | 74 |
| 6534431 | 77 | 69 | 54 | 79 |
| 6534432 | 70 | 64 | 45 | 79 |
| 6534433 | 55 | 58 | 39 | 84 |
| 6534434 | 66 | 61 | 43 | 75 |

* - Outside of specification
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.
** = This limit was used in the evaluation of the final result

| | | | | |
|---|---|---|---|---|
| 6534435 | 65 | 53 | 33 | 74 |
| Blank | 92 | 97 | 98 | 73 |
| MS | 66 | 61 | 43 | 75 |
| MSD | 65 | 53 | 33* | 74 |
| OPR | 80 | 84 | 83 | 63 |
| Limits: | 28-130 | 23-140 | 17-157 | 24-169 |

| | 13C12-12378-PeCDF | 13C12-2378-TCDF-Conf |
|---|---|---|
| 6534429 | 83 | |
| 6534430 | 80 | |
| 6534431 | 67 | |
| 6534432 | 77 | |
| 6534433 | 86 | 86 |
| 6534434 | 70 | |
| 6534435 | 70 | |
| Blank | 97 | 70 |
| MS | 70 | 75 |
| MSD | 70 | 74 |
| OPR | 84 | 63 |
| Limits: | 24-185 | 24-169 |

* - Outside of specification
(1) The result for one or both determinations was less than five times the LOQ / MRL.
(2) The unspiked result was more than four times the spike added.
** = This limit was used in the evaluation of the final result

**Dioxins/Furans Data Qualifiers**

| | |
|---|---|
| B | Detected in Method Blank |
| U | Undetected |
| J | Estimated concentration between Estimated Detection Limit and Minimum Level |
| E | Exceeds calibration range |
| C | Confirmed quantitation on secondary GC column |
| Q | EMPC - Estimated Maximum Possible Concentration |
| F | Interference is present |
| S | Saturation of detection signal |

**QC Comment**

#VALUE!

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**6534429 TP2-2 Grab Soil Sample**

00111 Moisture

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

11031 Dioxins/Furans in Solids-HRMS

The sample was injected numerous times. Each time the responses for various analytes in the calibration check standard injected after the sample were outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.

The recovery for 13C12-1234678-HpCDF was outside of QC limits in the blank associated with this sample.

The recovery for 13C12-OCDF was outside of QC limits in the OPR associated with this sample.

State of New Jersey Lab Certification No. PA011
The temperature of the temperature blank bottle(s) upon receipt at the lab was 8.6 C using a Hg thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 6.6-9.0 C.

**6534430 TP3-2 Grab Soil Sample**

00111 Moisture

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

11031 Dioxins/Furans in Solids-HRMS
The sample was injected numerous times. Each time the responses for various analytes in the calibration check standard injected after the sample were outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.

The recovery for 13C12-1234678-HpCDF was outside of QC limits in the blank associated with this sample.

The recovery for 13C12-OCDF was outside of QC limits in the OPR associated with this sample.

State of New Jersey Lab Certification No. PA011
The temperature of the temperature blank bottle(s) upon receipt at the lab was 8.6 C using a Hg thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 6.6-9.0 C.

**6534431 TP5-2 Grab Soil Sample**

00111 Moisture

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

11031 Dioxins/Furans in Solids-HRMS
The sample was injected numerous times. Each time the responses for various analytes in the calibration check standard injected after the sample were outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.

The recovery for 13C12-1234678-HpCDF was outside of QC limits in the blank associated with this sample.

The recovery for 13C12-OCDF was outside of QC limits in the OPR associated with this sample.

State of New Jersey Lab Certification No. PA011
The temperature of the temperature blank bottle(s) upon receipt at the lab was 8.6 C using a Hg thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 6.6-9.0 C.

**6534432 TP6-2 Grab Soil Sample**

00111 Moisture

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

11031 Dioxins/Furans in Solids-HRMS
The sample was injected numerous times. Each time the responses for various analytes in the calibration check standard injected after the sample were outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.

The recovery for 13C12-1234678-HpCDF was outside of QC limits in the blank associated with this sample.

The recovery for 13C12-OCDF was outside of QC limits in the OPR associated with this sample.

State of New Jersey Lab Certification No. PA011
The temperature of the temperature blank bottle(s) upon receipt at the lab was 8.6 C using a Hg thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 6.6-9.0 C.

**6534433 TP7-2 Unspiked Grab Soil Sample**

00111 Moisture

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

11031 Dioxins/Furans in Solids-HRMS
The sample was injected numerous times. Each time the responses for various analytes in the calibration check standard injected after the sample were outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.

The recovery for 13C12-1234678-HpCDF was outside of QC limits in the blank associated with this sample.

The recovery for 13C12-OCDF was outside of QC limits in the OPR associated with this sample.

The recoveries for 13C12-OCDD and 13C12-OCDF were outside of QC limits in this sample.

11031 Dioxins/Furans in Solids-HRMS

The sample was injected numerous times. Each time the responses for various analytes in the calibration check standard injected after the sample were outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.

The recovery for 13C12-1234678-HpCDF was outside of QC limits in the blank associated with this sample.

The recovery for 13C12-OCDF was outside of QC limits in the OPR associated with this sample.

The recoveries for 13C12-OCDD and 13C12-OCDF were outside of QC limits in this sample.

State of New Jersey Lab Certification No. PA011
The temperature of the temperature blank bottle(s) upon receipt at the lab was 8.6 C using a Hg thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 6.6-9.0 C.

**6534434 TP7-2 Matrix Spike Grab Soil Sample**

11031 Dioxins/Furans in Solids-HRMS

The sample was injected numerous times. Each time the responses for various analytes in the calibration check standard injected after the sample were outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.

The recovery for 13C12-1234678-HpCDF was outside of QC limits in the blank associated with this sample.

The recovery for 13C12-OCDF was outside of QC limits in the OPR associated with this sample.

State of New Jersey Lab Certification No. PA011
The temperature of the temperature blank bottle(s) upon receipt at the lab was 8.6 C using a Hg thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 6.6-9.0 C.

**6534435 TP7-2 Matrix Spike Dup Grab Soil Sample**

00121 Moisture Duplicate

The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.

11031 Dioxins/Furans in Solids-HRMS

The sample was injected numerous times. Each time the responses for various analytes in the calibration check standard injected after the

sample were outside the acceptance criteria. Therefore, this effect is attributed to the sample matrix and the data is reported.

The recovery for 13C12-1234678-HpCDF was outside of QC limits in the blank associated with this sample.

The recovery for 13C12-OCDF was outside of QC limits in the OPR associated with this sample.

The recoveries for 13C12-OCDD and 13C12-OCDF were outside of QC limits in this sample.

State of New Jersey Lab Certification No. PA011
The temperature of the temperature blank bottle(s) upon receipt at the lab was 8.6 C using a Hg thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 6.6-9.0 C.

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# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **RL** | Reporting Limit | **BMQL** | Below Minimum Quantitation Level |
| **N.D.** | none detected | **MPN** | Most Probable Number |
| **TNTC** | Too Numerous To Count | **CP Units** | cobalt-chloroplatinate units |
| **IU** | International Units | **NTU** | nephelometric turbidity units |
| **umhos/cm** | micromhos/cm | **ng** | nanogram(s) |
| **C** | degrees Celsius | **F** | degrees Fahrenheit |
| **meq** | milliequivalents | **lb.** | pound(s) |
| **g** | gram(s) | **kg** | kilogram(s) |
| **µg** | microgram(s) | **mg** | milligram(s) |
| **mL** | milliliter(s) | **L** | liter(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| | | **pg/L** | picogram/liter |

**<** less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

**>** greater than

**J** estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

**ppm** parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

**ppb** parts per billion

**Dry weight basis** Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

*U.S. EPA CLP Data Qualifiers:*

**Organic Qualifiers**

| | |
|---|---|
| **A** | TIC is a possible aldol-condensation product |
| **B** | Analyte was also detected in the blank |
| **C** | Pesticide result confirmed by GC/MS |
| **D** | Compound quantitated on a diluted sample |
| **E** | Concentration exceeds the calibration range of the instrument |
| **N** | Presumptive evidence of a compound (TICs only) |
| **P** | Concentration difference between primary and confirmation columns >25% |
| **U** | Compound was not detected |
| **X,Y,Z** | Defined in case narrative |

**Inorganic Qualifiers**

| | |
|---|---|
| **B** | Value is <CRDL, but ≥IDL |
| **E** | Estimated due to interference |
| **M** | Duplicate injection precision not met |
| **N** | Spike sample not within control limits |
| **S** | Method of standard additions (MSA) used for calculation |
| **U** | Compound was not detected |
| **W** | Post digestion spike out of control limits |
| ***** | Duplicate analysis not within control limits |
| **+** | Correlation coefficient for MSA <0.995 |

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.